an inductively coupled plasma source configured to generate a high-frequency electromagnetic alternating field;

a reactor configured to produce an inductively coupled plasma from reactive particles by the action of the high-frequency electromagnetic alternating field upon a reactive gas; and

a first arrangement configured to produce a magnetic field between the substrate and the inductively coupled plasma source, the magnetic field one of static and time-wise varying.

34. (New) The device according to claim 33, wherein the substrate includes a silicon element.

35. (New) The device according to claim 33, wherein the first arrangement surrounds the reactor in at least one region between the inductively coupled plasma source and the substrate, a wall of the reactor formed in the region by a spacer.

36. (New) The device according to claim 33, wherein the first arrangement includes one of a magnetic field coil having an appertaining current supply unit and a permanent magnet.

37. (New) The device according to claim 36, wherein the magnetic field coil is configured to produce a magnetic field that varies with the current supply unit in at least one of a time-wise and a pulsable manner.

38. (New) The device according to claim 33, wherein the substrate is positioned on a substrate electrode, the substrate electrode configured to be acted upon by a substrate voltage generator with a high-frequency power that is one of continuous, time-varying, and pulsed.

39. (New) The device according to claim 33, wherein an inside of the reactor includes an aperture arranged between the first arrangement and the substrate, the aperture concentric with the reactor wall.

40. (New) The device according to claim 33, further comprising a second arrangement configured to set a plasma power coupled by the inductively coupled plasma source into the inductively coupled plasma via the high-frequency electromagnetic alternating field.

41. (New) The device according to claim 40, wherein the second arrangement includes an inductively coupled plasma coil generator configured to produce a variably adjustable high-frequency power coupled into the plasma as plasma power, the high-frequency power at least one of periodically varied and pulsed.

42. (New) The device according to claim 41, wherein an average plasma power of 300 watt to 5000 watt is coupleable into the inductively coupled plasma using the inductively coupled plasma coil generator.

43. (New) The device according to claim 40, further comprising a second impedance transformer in the form of a balanced symmetrical matching network configured to match an output impedance of the inductively coupled plasma coil generator to a plasma impedance which is a function of the coupled-in plasma power.

44. (New) The device according to claim 43, wherein in response to a predefined maximum plasma power to be coupled into the inductively coupled plasma, the second impedance transformer is preset to ensure an at least largely optimal impedance matching.

45. (New) The device according to claim 41, further comprising components integrated into the inductively coupled plasma coil generator are configured to vary a frequency of the generated electromagnetic alternating field to match an impedance as a function of the plasma power to be coupled in.

46. (New) The device according to claim 45, wherein the inductively coupled plasma coil generator includes an automatically acting feedback circuit having a frequency-selected component.

47. (New) The device according to claim 41, wherein the inductively coupled plasma coil generator includes at least one regulated power element, at least one frequency-selective band-pass filter having a predefined steady-state frequency, and one of a delay line and a phase shifter.

48. (New) The device according to claim 41, wherein the inductively coupled plasma coil generator is connected with at least one of the current supply unit and the substrate voltage generator.

49. (New) A method for etching a substrate using a device having an inductively coupled plasma source configured to generate a high-frequency electromagnetic alternating field and a reactor configured to produce an inductively coupled plasma from reactive particles by the action of the high-frequency electromagnetic alternating field upon a reactive gas, comprising the step of:

producing a magnetic field, during the etching, a direction of which is at least one of approximately and predominantly parallel to a direction defined by a connecting line of the substrate and the inductively coupled plasma;

wherein the magnetic field is at least one of static, time-wise varying, periodically varying and pulsed.

50. (New) The method according to claim 49, wherein the substrate includes a silicon element.

51. (New) The method according to claim 49, wherein the magnetic field extends into a region of the substrate and the inductively coupled plasma.

52. (New) The method according to claim 49, wherein the magnetic field is produced in the producing step using an amplitude of a field strength between 10 mTesla and 100 mTesla on an inside of the reactor.

53. (New) The method according to claim 49, wherein the inductively coupled plasma is produced with a high-frequency electromagnetic alternating field having a frequency that is one of constant and varying within a frequency range about a steady-state frequency.

54. (New) The method according to claim 53, wherein the steady-state frequency is 13.56 MHz.

55. (New) The method according to claim 49, wherein the etching is performed in alternating etching and passivating steps.

56. (New) The method according to claim 49, wherein the etching is performed at a process pressure of 5 µbar to 100 µbar and a coupled-in average plasma power of 300 watt to 5000 watt.

57. (New) The method according to claim 49, wherein a pulsed magnetic field is produced, via a current supply unit, an amplitude of field strength of which, on an inside of the reactor, is between 10 mTesla and 100 mTesla.

58. (New) The method according to claim 57, wherein the magnetic field is pulsed at a frequency of 10 Hz to 20 kHz, and a pulse/pause ratio of 1:1 to 1:100 is set.

59. (New) The method according to claim 49, wherein a variably adjustable high-frequency power is produced, is coupled as plasma power into the inductively coupled plasma, and is at least one of periodically varied and pulsed.

60. (New) The method according to claim 59, further comprising the step of operating an inductively coupled plasma coil generator having a frequency of 10 Hz to 1 MHz in a pulsed fashion to produce the plasma power, an average plasma power of 300 watt to 5000 watt coupled into the inductively coupled plasma.

61. (New) The method according to claim 60, wherein the inductively coupled plasma coil generator is operated using a pulse/pause ratio of 1:1 to 1:100.

62. (New) The method according to claim 59, wherein the pulsing of the coupled-in plasma power is accompanied by a change in frequency of the coupled-in high-frequency power.

63. (New) The method according to claim 62, further comprising the step of controlling the frequency change to maximize the plasma power coupled into the inductively coupled plasma during pulsing.

64. (New) The method according to claim 62, wherein the inductively coupled plasma coil generator is operated in the form of an automatically acting feedback circuit, and a frequency of the high-frequency power produced, which forms the coupled-in high-frequency electromagnetic alternating field, is varied about the steady-state frequency.

65. (New) The method according to claim 49, wherein the pulsing of the magnetic field is one of correlated in time and synchronized with the pulsing of at least one of the coupled-in plasma power and the high-frequency power coupled into the substrate via the substrate voltage generator.

66. (New) The method according to claim 65, wherein the synchronization is performed so that the magnetic field is first applied before a high-frequency power pulse of the inductively coupled plasma coil generator for the coupling of the plasma power into the inductively coupled plasma, and the magnetic field is only switched off again after the high-frequency power pulse has faded out.

67. (New) The method according to claim 65, wherein a pulse/pause ratio of the magnetic field pulses is greater than a pulse/pause ratio of the high-frequency power pulses, and the magnetic field is held at least approximately constant during the high-frequency power pulses.